Your Power Partner for uninterruptible power supply

in all power classes.

Date: 2008

PERFECT IN FORM AND FUNCTION

AEG

The correct UPS for every application.

AEG Power Supply Systems provides customized solutions for protection against network disruptions and the loss of data and costly downtime periods suffered as a result.

„Plug & Play“ options

Our range of compact UPS systems includes more than 30 different UPS models of up to 24 kVA.

This incorporates UPS devices for private use, systems which can be incorporated into racks for the IT cubicle and "Plug & Safe" parallel switchable modular UPS systems for computer centres and industry.

Solutions for every market and every application

Our solutions meet the requirements of SOHOs, small and medium-sized enterprises, data centres and corporate networks.

Experience and continuity

AEG Power Supply Systems has been a supplier of reliable power systems for critical applications for over 60 years and we are continuously developing future-oriented IT and industrial standards.

Product support

As a renowned and experienced company, AEG Power Supply Systems is there to support you by providing easily expandable products, reliable delivery and offering trade-oriented support and service packages.

Our Group and global experience

AEG Power Supply Systems is the German subsidiary of Saft Power Systems, which combines three internationally recognised names: AEG Power Supply Systems, Harmer+Simmons and

Saft Power Systems. The Group has many years of experience with power supply systems and solutions. Our products range from combined DC and AC solutions to modular telecommunication

systems, and from power controllers to inverters for solar applications.

Whether customized solutions or turnkey projects, we offer high quality and globally competitive systems in all power classes.

Committed to providing peak performance

With more than 250 engineers, technicians and project managers, the Saft Power Systems Group achieves outstanding results in the field of research and development as well as in application engineering. This really pays off, as more than 70 active patents are currently pending in the power supply sector.

Milestones

2005 Saft Power Systems Group becomes independent

1998 Saft acquires AEG SVS Power Supply Systems GmbH in Belecke

1995 First UPS in the world with 100 % digital control system called Protect 3.

1988 Development of the UPS with IGBT transistors (single and three phase)

1985 First rectifier Profitec S with microprocessor

1972 Development of the first switch mode power supply 5/25

1969 Development of the power control

1965 Development of the three phase thyristor inverter

1961 Development of the single phase thyristor inverter

1951 DC supply for the "Deutsche Bundespost" (German Federal Post Office)

1947 Establishment of Saft Power Systems and development of a wide range of innovative battery charging equipment and power supply systems

1945 Establishment of the AEG plant in Warstein-Belecke with 25 employees

Compact UPS HOME

Compact UPS OFFICE IT

Protect Home.

600 VA.
Comprehensive protection for satellite, TV, phone, fax or modem.

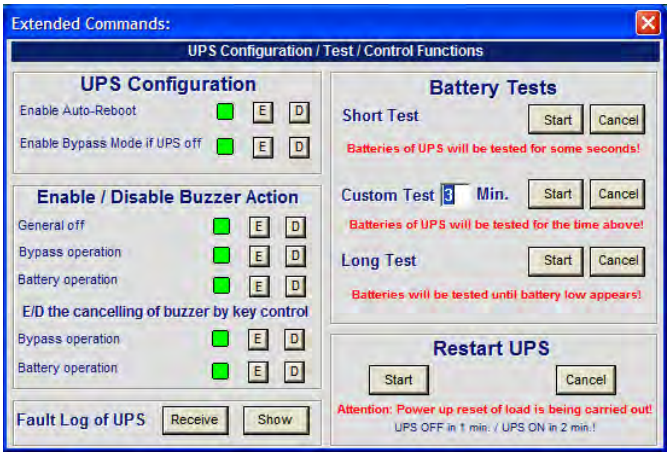
Protect A.

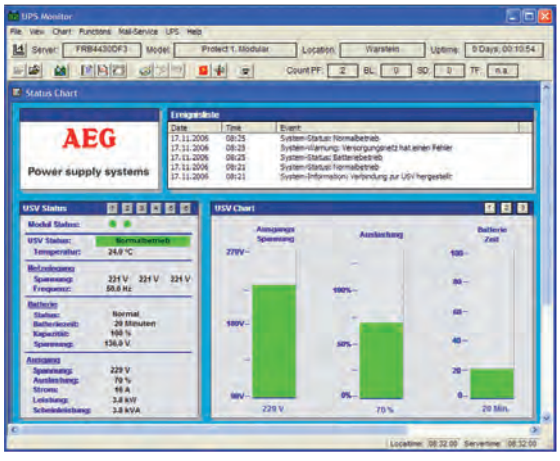
500 to 1400 VA.
Protects PCs, workstations and phone systems.

Protect B.

750 to 3000 VA.
Rack or tower for server and network components with sinusoidal output.

Page	6	8	10
Power (kVA)	0.6	0,5–1,4	0,75–3
Technology acc. to IEC 62040-3	VFD (offline)	VI (line – interactive)	VI (line – interactive)
Input/output	1 ph~/1 ph~	1 ph~/1 ph~	1 ph~/1 ph~
Parallel operation	no	no	no
Autonomy time at full load (min.)	3	3	5–65





Protect C. /C.R *

1 to 10 kVA.
Rack or tower for sensitive networks, small computer centres, Intranet and Internet servers.

12	
1–10	
VFI (double conversion)	
1 ph~/1 ph~	
yes	
5–60	

Protect 1.

10 to 20 kVA.
For small data centres, protection of cash till systems, building technology.

14	
10–20	
VFI (double conversion)	
3 ph~/1 ph~	
yes	
6–80	

Protect 1.M

4 to 24 kVA.
Scaleable, modular high-performance UPS system for the IT sector.

16	
4–24	
VFI (double conversion)	
1 ph~ or 3 ph~/1 ph~	
yes (internal)	
10–90	

* Also available with enhanced battery charger for autonomy times over a period of hours.

"CompuWatch" software

Our shutdown and UPS management software "CompuWatch" is provided on CD for all single and three-phase UPS devices

- Storage of system operations and graphical representation of the UPS values
- Definable (shutdown) processes can be triggered in a time or event-controlled manner via shell script
- Event-controlled transmission of messages via e-mail and SMS
- Communication via Novell interface, RS232, network and USB
- Support for all major operating systems
- further information can be found on page 18

2006 FROST & SULLIVAN
UPS Product Line Leadership of the Year Award

Ease of use

Protect Home: Uninterruptible security for PCs and

Protect yourself against data loss with an uninterruptible power supply. With a power rating of 600 VA Protect Home. offers professional and economic protection against the consequences of mains failure, dangerous voltage peaks and voltage fluctuations.

Practical protection

Protect Home. provides comprehensive overvoltage protection which is particularly suited to multimedia applications, such as phones, fax machines, modems, satellite and TV.

Consumers can be connected directly via UPS backed-up shockproof sockets.

The short-circuit and overload protection provided by the Protect Home. range features cutting edge technology for your safety requirements.

Easy operation

The clearly arranged "One-Board-Design" and LED displays provide clear information about the most important operating statuses. The simple operation is complemented by an audible alarm.

USB and RS232 connections for easy control

Protect Home. can be connected quickly and easily to a PC via a USB or RS232 interface. The special shutdown software "CompuWatch" supplied by AEG allows major operating systems to be controlled and shut down automatically in the event of a prolonged mains failure.

Protection against mains failure and dangerous voltage peaks

- Microprocessor-controlled, robust UPS technology against power failure and dangerous voltage peaks
- Fully-fledged "CompuWatch" software, "Plug & Play"
- USB port and RS232 interface for monitoring and controlling from a PC
- Overvoltage protection for satellite and TV as well as data line protection for phone, fax and modem
- User-friendly battery design
- 24 month warranty with advanced replacement service

Well equipped: Comprehensive protection for satellite, TV, phone, fax or modem as well as a USB and serial port for communication with your PC.

multimedia applications.

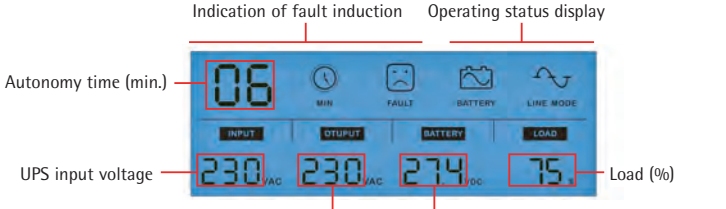
Classification VFD SY 322 according to IEC 62040-3	Protect Home.
Type rating	600 VA/300 W
UPS Input	
Nominal connection voltage	230 Vac
Frequency	50 Hz
Current consumption at full load (max.)	3.0 A
UPS Output	
Rated output voltage	230 Vac
Rated output voltage in battery operation	± 10 %
Frequency in battery operation	50 Hz ± 1 Hz
Nominal output current	2.6 A
Changeover time in the event of a mains failure	2–6 ms (typical)
Output waveform	approximated sine
Overload/short circuit protection	yes
BATTERY	
Type	sealed, maintenance-free (proprietary brand)
Autonomy time for 1 PC with 17" TFT	~ 10 min.
Exhaustive discharge protection/protection against excess load	yes
Battery charging time (to 90 % of rated capacity)	8 hrs
COMMUNICATION	
Interfaces	USB and RS232 with status messages and measured values
Shutdown software (on CD)	included in delivery, for all major operating systems (e.g. Windows, Linux, Mac)
Alarms (acoustic/optical)	mains failure, battery discharged, battery error, fault
GENERAL DATA	
Inherent noise (1m distance)	< 40 dB(A)
Operating temperature range	0°-40°C
Humidity	20–90 %
Overvoltage protection	for phone, fax, modem (RJ11) and satellite TV receiver (F-connector)
Installation height	up to 1 000 m at nominal output
Load outputs	4 shockproof sockets
	(1 x overvoltage protection/3 x additional UPS protection)
Housing colour	Blackline
Dimensions W x H x D (mm)	125 x 85 x 300
Weight	3.5 kg
Scope of delivery	Mains connection cable, management software "CompuWatch" (CD),
	RS232 and USB communication cable, operating instructions
Conformity	CE

Ease of use

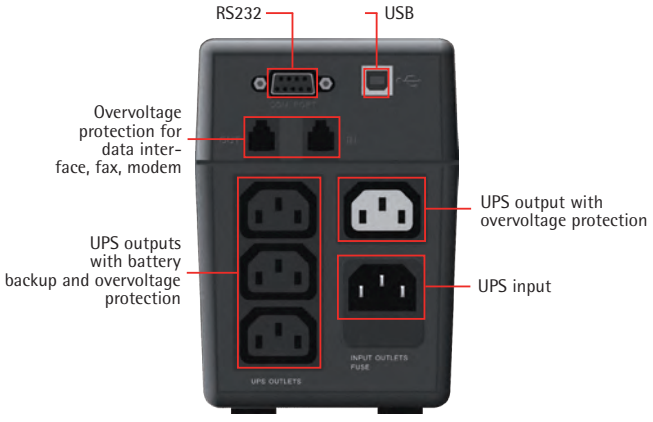
Protect A: Uninterruptible security for PCs, work

Protection against mains failure and voltage deviations

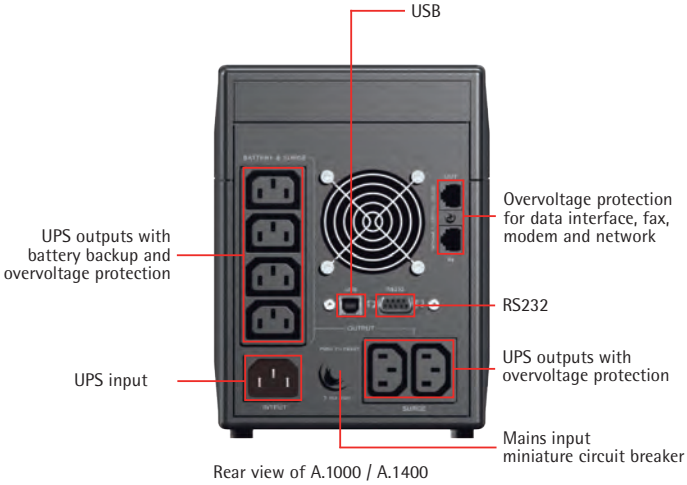
- Modern VI (line-interactive) technology against power failure and dangerous overvoltage
- Automatic voltage regulation against mains voltage deviations (AVR)
- Double mains filter against voltage peaks
- Easy installation ensured by cables supplied and optimum operation
- Use of sealed, maintenance-free lead-acid batteries (proprietary brand) with exhaustive discharge protection
- Hot-swappable battery design
- USB port and RS232-interface
- Data line protection for phone, fax, modem and network
- 24 month warranty with advanced replacement service



Display screen of Protect A.1000 / A.1400



Rear view of A.500 / A.700


USB
Overvoltage protection for data interface, fax, modem and network
UPS outputs with battery backup and overvoltage protection
RS232
UPS outputs with overvoltage protection
UPS input
Mains input miniature circuit breaker

Rear view of A.1000 / A.1400

stations and phone systems.

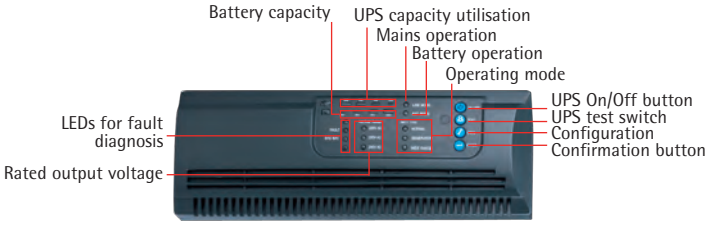
Classification VFD SY 322 according to IEC 62040-3	A. 500	A. 700	A. 1000	A. 1400
Type rating	500 VA	700 VA	1000 VA	1400 VA
	300 W	420 W	600 W	840 W
UPS Input				
Nominal connection voltage	220 Vac/230 Vac/240 Vac			
Voltage range without battery operation	160-290 Vac		170-280 Vac	
Frequency (automatic detection)	50 Hz/60 Hz ± 5 Hz			
UPS Output				
Rated output voltage/AVR technology	220 Vac/230 Vac/240 Vac			
Rated output voltage in battery operation	± 10 %			
Frequency in battery operation	50 Hz/60 Hz ± 1 Hz			
Nominal output current (at 230 Vac)	2.3 A	3.0 A	4.3 A	6.1 A
Changeover time in the event of a mains failure	2–6 ms (typical)			
Voltage curve	approximated sine			
Overload protection	yes	yes	yes	yes
BATTERY				
Type	sealed, maintenance-free (proprietary brand) - hot swappable			
Autonomy time for 1 PC with 17" TFT	~ 15 min.	~ 20 min.	~ 30 min.	~ 40 min.
Exhaustive discharge protection/protection against excess load	yes	yes	yes	yes
Charging time (to 90 % of rated capacity)	8 hrs			
COMMUNICATION				
Interfaces	USB and RS232 (with status messages and measured values)			
Shutdown software (on CD)	included in delivery, for all major operating systems (e. g. Windows, Linux, Mac)			
Alarms (acoustic/optical)	mains failure, overload, battery discharged, replace battery, fault			
			LCD display for input and output voltage[V]/ capacity utilisation[%]/autonomy time[min.]	
GENERAL DATA				
Inherent noise (1m distance)	< 40 dB (A) (without fan)		< 45 dB (A) (AC operation < 40 dB (A)) speed-controlled fan	
Operating temperature range	0°–40°C			
Relative humidity	0-90 % (without condensation)			
Load outputs	3 + 1 x IEC 320 C13		4 + 2 x IEC 320 C13	
Overvoltage protection for data lines	RJ11 (phone, fax, modem)		RJ11/RJ45 (add. network), Ethernet 10 & 100 Mbps	
Housing colour	Blackline			
Dimensions approx. W x H x D (mm)	100 x 140 x 330		145 x 205 x 405	
Weight approx.	6 kg	6.5 kg	9.5 kg	10 kg
Scope of delivery	Mains connection cable, 2 device connecting cables, management software			
	"CompuWatch" (CD) incl. 1 network licence,			
	USB and RS232 communication cables, operating instructions			
Conformity	CE			

Ease of use

Protect B: Uninterruptible security with sine wave

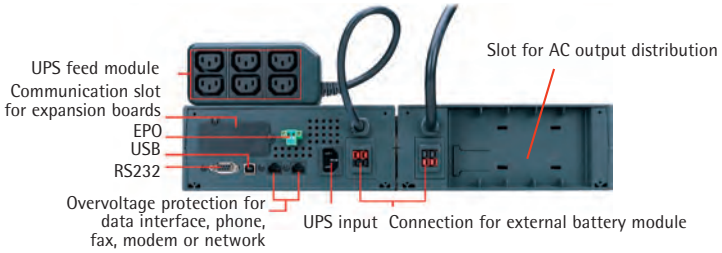
Flexible use, intelligent functions

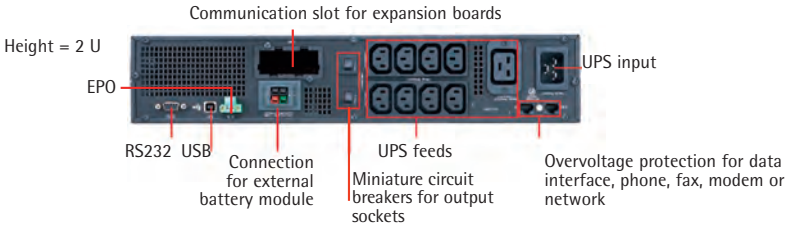
- Modern VI (line-interactive) protection technology with sine wave output voltage
- Compact construction and variable use due to combination design tower/rack
- Robust design: overload capability and short circuit protection
- Overvoltage protection (RJ11/RJ45) for phone, fax, modem and network
- User-friendly battery design in hot-swappable configuration (from 1500 VA)
- Operator-friendly display for optimal readability / configuration
- Intelligent monitoring system with USB and RS232 interfaces
- Communication slot for expansion boards, e. g. SNMP (from 1500 VA)
- 24 month warranty with advanced replacement service



Protect B. operator panel

Protect B.1500 & B.2000 • rear view





Protect B. Tower	autonomy time (full/half load) [min.]				
	750 VA	1000 VA	1500 VA	2000 VA	3000 VA
Standard autonomy time	5 /15	5 /15	no integrated battery		5/14
1 additional battery module	-	-	5/15	5/14	24/55
2 additional battery modules	-	-	15/45	15/35	45/90
3 additional battery modules	-	-	30/80	27/65	55/140
4 additional battery modules	-	-	50/110	40/85	75/180
5 additional battery modules	-	-	65/150	50/110	-

Protect B. Rack	autonomy time (full/half load) [min.]				
	750 VA	1000 VA	1500 VA	2000 VA	3000 VA
Standard autonomy time	5/15	5 /15	5 /15	5/14	5/14
1 additional 19" battery insert	-	-	30/80	27/65	24/55
2 additional 19" battery insert	-	-	65/150	50/110	45/90
3 additional 19" battery insert	-	-	-	-	55/140
4 additional 19" battery insert	-	-	-	-	75/180

output for server and network components.

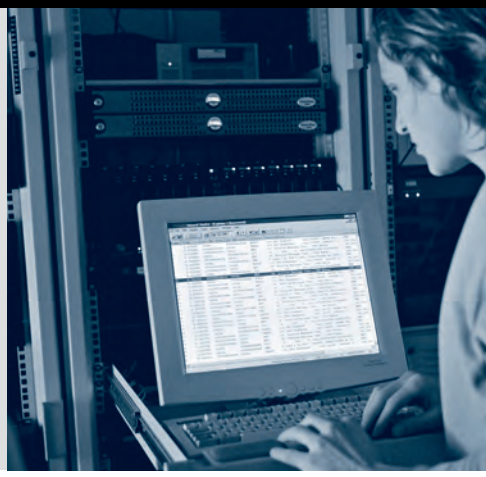
Classification VI SS 211 according to IEC 62040-3	B. 750	B. 1000	B. 1500	B. 2000	B. 3000
Type rating	750 VA	1000 VA	1500 VA	2000 VA	3000 VA
	500 W	700 W	1050 W	1340 W	2100 W
UPS Input					
Nominal connection voltage	220 Vac/230 Vac/240 Vac				
Voltage range without battery operation	161/184–276 Vac (configurable)				
Frequency (automatic detection)	50 Hz/60 Hz ± 5 Hz (> 40 Hz during generator operation)				
Current consumption at full load (max.)	5 A	8 A	10 A	10 A	16 A
UPS Output					
Rated output voltage/AVR technology	220 Vac/230 Vac/240 Vac				
Rated output voltage in battery operation	± 5 %				
Frequency in battery operation	50 Hz/60 Hz ± 0.1 Hz				
Nominal output current (at 230 Vac)	3.2 A	4.3 A	6.5 A	8.7 A	13.0 A
Changeover time in the event of a mains failure	2–4 ms (typical), 6 ms max.				
Voltage curve	pure sinusoidal				
Overload capacity in mains operation	110 % for 3 min./150 % for 200 ms				
Overload protection	yes	yes	yes	yes	yes
BATTERY					
Type	sealed, maintenance-free (proprietary brand) - hot swappable (from 1500 VA)				
Nominal DC voltage (intermediate circuit)	24 Vdc		48 Vdc		96 Vdc
Autonomy time during nominal load	5 min.	5 min.	5 min.	5 min.	5 min.
	-	-	Expandable via ext. battery modules		
Exhaustive discharge protection/protection against excess load	yes	yes	yes	yes	yes
Charging time (to 90 % of rated capacity)	3 hrs	3 hrs	3 hrs	3 hrs	3 hrs
COMMUNICATION					
Interfaces	USB and RS232 (with status messages and measured values), communication slot (from 1500 VA)				
	for SNMP, potential-free relay contacts, input contact for emergency shutdown,				
	Configuration panel for selecting the voltage and setting the operating mode				
Shutdown software (on CD)	5 network licences included in delivery				
	for all major operating systems (e. g. Windows, Linux, Mac)				
Alarms (acoustic/optical)	Separate LED bar graphs for UPS capacity utilisation and battery capacity display,				
	indicators for mains failure, overload, battery discharged, replace battery, fault				
GENERAL DATA					
Inherent noise (1m distance)	< 45 dB(A)				
Operating temperature range	0°-35°C				
EMC Conformity	EN 50091-2, EN 61000-3-2, EN 61000-3-3				
EMC emitted interference	EN 61000-6-3 Class A				
Overvoltage protection for data lines	RJ11 (phone, fax, modem)/RJ45 (Ethernet 10 Mbps/100 Mbps)				
Relative humidity	0-90 % (without condensation)				
Installation height	up to 1 000 m at nominal output				
Load outputs	4 x IEC 320 C13		6 x IEC 320 C13		8 x IEC 320 C13
			removable module		1 x IEC 320 C19
Housing colour	Blackline				
Dimensions of UPS approx. W x H x D (mm)	235 x 88 x 383		217 x 88 x 414		438 x 88 x 582
Dimensions of battery approx. W x H x D (mm)	-	-	217 x 88 x 414		438 x 88 x 582
Weight of UPS approx.	8.5 kg	9.5 kg	6.5 kg		31.5 kg
Weight of battery approx.	-	-	12 kg		40.5 kg
Scope of delivery	Mains connection cable, 2 device connecting cables, management software				
	"CompuWatch" (CD), USB and RS232 communication cables, operating instructions				
Conformity	CE				

Ease of use

Protect C: High performance USB- and RS232 for

Reliable technology for your safety

- VFI topology (double-conversion): Protects against all mains power disturbances
- Microprocessor control/DSP guarantees maximum availability
- Sinusoidal current consumption (high frequency PWM with IGBTs)
- Automatic bypass, additional integrated maintenance bypass at 6 and 10 kVA (tower)
- n+x technology at 6 and 10 kVA provides redundancy/increase in power output (tower)
- Expansion slot for expansion boards SNMP/ potential-free signals
- Extremely low construction depth of the 1000 to 3000 VA rack models for integration in 600 series cubicles
- 24 month warranty with advanced replacement service



Protect C. 10 kVA rear view

Fan
RS232
Communication slot for optional expansion boards: SNMP, USB, AS/400
Connection for parallel operation
Connection for external battery module
Mains input miniature circuit breaker
Manual bypass switch
Connection terminals for network input and output, additional terminal pair for setting individual or parallel operation

Autonomy times - Protect C.

Protect C. Tower	autonomy time (full/half load) [min.]				
	1000 VA	2000 VA	3000 VA	6000 VA	10000 VA
Standard autonomy time	6/20	10/30	5/16	8/26	5/16
1 additional battery module	38/97	55/130	30/85	26/67	16/42
2 additional battery modules	76/170	106/237	60/149	47/112	27/60
3 additional battery modules	-	-	-	60/157	42/97
4 additional battery modules	-	-	-	94/203	53/118

Protect C. Rack	autonomy time (full/half load) [min.]			
	1000 VA	2000 VA	3000 VA	6000 VA
Standard autonomy time	6/20	-	-	-
1 additional battery module	38/97	10/30	5/16	8/26
2 additional battery modules	76/170	30/85	17/49	26/67
3 additional battery modules	-	55/130	30/85	47/112
4 additional battery modules	-	83/180	48/114	67/157
5 additional battery modules	-	106/237	60/149	94/203

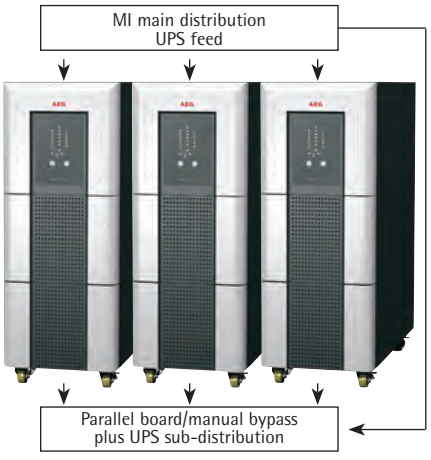
the IT sector in medium-sized companies.

Classification VFI SS 211 according to IEC 62040-3	C. 1000	C. 2000	C. 3000		
Classification VFI SS 111 according to IEC 62040-3				C. 6000	C. 10000
Type rating	1000 VA	2000 VA	3000 VA	6000 VA	10000 VA
	700 W	1400 W	2100 W	4200 W	7000 W
			can be switched in parallel (n+x) (tower)		
UPS Input					
Nominal connection voltage	220 Vac/230 Vac/240 Vac				
Voltage range without battery operation	160-300 Vac			176-276 Vac	
Frequency (automatic detection)	50 Hz/60 Hz ± 4 Hz				
Mains current (system disturbance factor)	0.96			λ ≥ 0.98	
Current consumption at full load (max.)	7 A	10 A	16 A	31 A	50 A
UPS Output					
Rated output voltage	220 Vac/230 Vac/240 Vac ± 2 %			± 1 %	
Frequency in battery operation	50 Hz/60 Hz ± 0.2 %			± 0,1 %	
Nominal output current (at 230 Vac)	4.3 A	8.7 A	13 A	26 A	43.4 A
Changeover time in the event of a mains failure	0 ms (without interruption)				
Voltage curve	Sinusoidal, distortion THD < 4 %				
Overload capacity (online mode)	140 % 30 s/150 % 300 ms			125 % 10 min/130 % 1 s	
	then automatic switchover to integrated bypass				
Crest factor	3				
Short-circuit behaviour	short-circuit-proof				
BATTERY					
Type	sealed, maintenance-free (proprietary brand)				
Nominal DC voltage (intermediate circuit)	36 Vdc	96 Vdc		240 Vdc	
Exhaustive discharge protection/protection against excess load	yes	yes	yes	yes	yes
Charging time (to 90 % of rated capacity)	5 hrs	5 hrs	5 hrs	5 hrs	7 hrs
COMMUNICATION					
Interface	RS232 (with status messages and measured values), communication slot				
	for SNMP, USB, potential-free relay contacts				
Shutdown software (on CD)	5 network licences included in delivery, for all major operating systems				
	(Windows, Linux, Mac, Unix, Sun etc.)				
Alarms (acoustic/optical)	LED display for UPS capacity utilisation/				
	battery capacity display, status indicators,				
	indicators for mains failure, overload, battery discharged, replace battery, fault				
GENERAL DATA					
Efficiency AC-AC (at full load)	≥ 85 %		≥ 88 %	> 90 %	
Inherent noise (1m distance)	< 45 dB (A)		< 50 dB(A)	< 55 dB (A)	
Operating temperature range	0°-40°C				
EMC Conformity	EN 50091-2, EN 61000-3-2			EN 50091-2	
EMC emitted interference	EN 61000-6-3 Class B			EN 61000-6-3 > 25 A	
Overvoltage protection for data lines	RJ11 (phone, fax, modem)/RJ45 (Ethernet 10 Mbps/100 Mbps)				
Relative humidity	0-90 % (without condensation)				
Installation height	up to 1 000 m at nominal output				
Load outputs Tower	4 x IEC 320 C13	6 x IEC 320 C13	4 x IEC 320 C13	Permanent conn. via terminal strip	
			+ 1 x IEC 320 C19		
Rack	4 x IEC 320 C13		1 x IEC 320 C13	Permanent conn.	
			+ 1 x IEC 320 C19	+ 4 x IEC 320 C13	-
Housing colour	Blackline				
Dimensions approx. W x H x D (mm) Tower	145 x 220 x 400	192 x 340 x 460		260 x 717 x 570	
Battery	integrated	integrated		integrated	
Rack	482.6 x 88 x 450	482.6 x 88 x 450		482.6 x 132 x 600	-
Battery	integrated	482.6 x 88 x 450		482.6 x 132 x 600	-
Weight approx. Tower	15 kg	34 kg	35 kg	90 kg	93 kg
Rack	16.5 kg	10 kg + 29 kg	11 kg + 29 kg	18 kg + 64 kg	-
Scope of delivery	Mains connection cable, 3 device connecting cables (models C. 1000, C. 2000, C. 3000),				
	management software "CompuWatch" (CD), communication cable. Operating Instructions				
Conformity	CE				

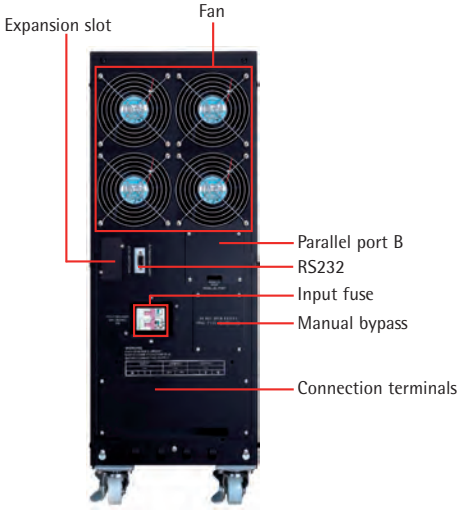
Ease of use

Protect 1: Online UPS systems for networks and

- VFI topology (online double conversion) with SBS and a maintenance bypass which is designed to prevent operating errors
- 10, 15, 20 kVA power spectrum in a space-saving, modern design
- n+x technology for achieving active redundancy and/or power increase
- Communication via RS232, expansion slot for expansion boards, e. g. SNMP
- Use of battery systems with a service life expectancy of 10–12 years according to EUROBAT
- State-of-the-art: Maximum reliability thanks to digital control (DSP) and the CAN-bus system. Maximum efficiency through the use of high-frequency IGBT technology
- 24 month warranty with advanced replacement service



Protect 1. in parallel operation



Rear view of Protect 1.200

Autonomy times – Protect 1. battery cabinets

Coupled battery cabinets	Autonomy time (full load/half load) [min.] Protect 1.100	Protect 1.150	Protect 1 200
1 x Protect 1.100 BP	16/42	-	-
2 x Protect 1.100 BP	42/97	-	-
3 x Protect 1.100 BP	60/134	-	-
1 x Protect 1. BP 20	19/47	10/29	6/19
2 x Protect 1. BP 20	47/103	29/68	19/47
3 x Protect 1. BP 20	78/177	47/103	34/62
4 x Protect 1. BP 20	103/243	68/153	47/103
5 x Protect 1. BP 20	138/312	85/202	63/138

1 "Plug & play" connection via a battery connection cable which is protected against polarity reversal

Ready-for-connection battery cabinets, preassembled

Service life of the integrated batteries: 10–12 years according to EUROBAT

computer centres 10-20 kVA.

Classification VFI SS 111 according to IEC 62040-3	Protect 1.100	Protect 1.150	Protect 1.200
	scaleable n+x technology (ability to switch up to 3 units in parallel)		
Type rating	10 kVA	15 kVA	20 kVA
	7 kW	10.5 kW	14 kW
UPS Input			
Nominal connection voltage	400/230 Vac (3/N/PE~)		
Voltage range without battery operation	304–478 Vac (bypass: 176–261 Vac)		
Frequency (automatic detection)	50 Hz/60 Hz ± 4 Hz		
Mains current (system disturbance factor)	λ > 0.95		
Current consumption at full load (max.)	13 A/46 A (bypass)	19 A/68 A (bypass)	25 A/91 A (bypass)
UPS Output			
Rated output voltage	220 Vac/230 Vac/240 Vac ± 1 %		
Frequency in battery operation	50 Hz/60 Hz ± 0.1 % (synchronising speed 1 Hz/s)		
Nominal output current (at 230 Vac)	43.4 A	65.2 A	86.9 A
Changeover time in the event of a mains failure	0 ms (without interruption)		
Voltage curve	Sinusoidal, distortion THD < 2 %		
Overload behaviour	130 % for 10 min./>130 % for 1 s, then automatic changeover		
	to electronic bypass: 0 ms (without interruption)		
Crest factor	3		
Short-circuit behaviour	short-circuit-proof		
BATTERY			
Nominal DC voltage (intermediate circuit)	240 Vdc		
Charging characteristics (default)	CVCC curve (trickle charge voltage 274 Vdc/charging current max. 4.2 Adc)		
Autonomy time	freely selectable and expandable through external battery modules		
Exhaustive discharge protection/protection from excess load	yes		
COMMUNICATION			
Interface	RS232 (with status messages and measured values)		
	Communication slot (for potential-free contacts, USB, SNMP)		
Shutdown software (on CD)	5 network licences included in delivery, for all major operating systems		
	(e.g. Windows, Linux, Mac), single user licence "CompuWatch"		
Alarms (acoustic/optical)	mains failure, overload, battery discharged, replace battery, fault		
	LED bar graph for capacity utilisation/battery capacity		
GENERAL DATA			
Efficiency AC-AC (full load)	> 90 %		
Inherent noise (1m distance)	≤ 55 dB (A)	≤ 60 dB (A)	
Operating temperature range	0°–40° C		
Installation height	Up to 1,000 m above sea level, at rated load		
EMC Conformity	EN 50091-2		
EMC emitted interference	EN 61000-6-3 > 25 A		
Humidity	0-95 % (without condensation)		
Housing colour	Blackline		
Dimensions of UPS approx. W x H x D (mm)	260 x 720 x 670		
Dimensions of battery cubicle approx. W x H x D (mm)	260 x 720 x 570	260 x 720 x 795	
	(Protect 1.100 BP)	(Protect 1. BP 20)	
Weight of UPS approx.	39 kg	55 kg	
Weight of battery cubicle approx.	135 kg	170 kg	
	(Protect 1.100 BP)	(Protect 1. BP 20)	
Scope of delivery	Parallel operation cable, communication cable,		
	management software "CompuWatch" (CD), operating instructions		
Conformity	CE		

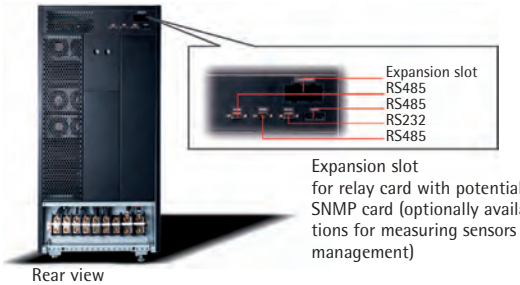
Ease of use

Protect 1.M: Modern high-performance UPS system

- High power reserves as a result of max. 24 kVA total output
- High safety reserves as a result of n+x technology
- Integrated decentralised static bypass switch (SBS) and a maintenance bypass which is designed to prevent operating errors
- 3 phase or 1 phase connection of the complete system; 1 phase output
- High autonomy time during power failure
- Use of manufacturer-independent standard batteries
- Intelligent battery management
- Modules easily exchanged during operation due to hot-swappable technology
- Module construction in slide-in design in the compact tower, suitable for 19" rack
- Communication module with LCD display, "dual monitoring" interface with expansion slot
- Management software "CompuWatch" on CD
- 24 month warranty with advanced replacement service

Front view

"Dual monitoring" interface



Rear view

Expansion slot
for relay card with potential-free contacts or SNMP card (optionally available with connections for measuring sensors and intelligent load management)

n+x technology • Level of redundancy

NUMBER OF UPS MODULES

Load	1 module	2 modules	3 modules	4 modules	5 modules	6 modules
4 kVA	no redundancy	n+1 (4 kVA)	n+2 (8 kVA)	n+3 (12 kVA)	n+4 (16 kVA)	n+5 (20 kVA)
8 kVA		no redundancy	n+1 (4 kVA)	n+2 (8 kVA)	n+3 (12 kVA)	n+4 (16 kVA)
12 kVA			no redundancy	n+1 (4 kVA)	n+2 (8 kVA)	n+3 (12 kVA)
16 kVA				no redundancy	n+1 (4 kVA)	n+2 (8 kVA)
20 kVA					no redundancy	n+1 (4 kVA)
24 kVA						no redundancy

Advantages
of n+x technology
- Higher availability
- Easier expandability
- Hot-swappable modules (no service interruptions)

ALLOCATION OF THE BATTERY CABINETS AVAILABLE EX STOCK - IN Protect 1.M CONFIGURATION

	15 min.	20 min.	30 min.	40 min.	60 min.	75 min.	90 min.
4 kVA	– – –	– – –	– – –	1 x 1.M BP28	1 x 1.M BP42	– – –	1 x 1.M BP56
8 kVA	1 x 1.M BP28	– – –	1 x 1.M BP42	1 x 1.M BP56	1 x 1.M BP84	2 x 1.M BP65	1 x 1.M BP84
							1 x 1.M BP42
12 kVA	1 x 1.M BP42	1 x 1.M BP65	– – –	1 x 1.M BP84	2 x 1.M BP65	– – –	3 x 1.M BP65
16 kVA	1 x 1.M BP56	– – –	1 x 1.M BP84	1 x 1.M BP84	2 x 1.M BP84	3 x 1.M BP65	4 x 1.M BP65
				1 x 1.M BP42			
20 kVA	– – –	1 x 1.M BP84	1 x 1.M BP84	3 x 1.M BP65	2 x 1.M BP84	4 x 1.M BP65	5 x 1.M BP65
			1 x 1.M BP42		1 x 1.M BP42		
24 kVA	1x 1.M BP84	2 x 1.M BP65	1 x 1.M BP84	2 x 1.M BP84	4 x 1.M BP65	5 x 1.M BP65	6 x 1.M BP65
			1 x 1.M BP42				

Other designs are available on request.

for the IT sector.

Classification VFI SS 111 according to IEC 62040-3	Protect 1.M	Protect 1.M
	UPS MODULE	System cubicleMAX. (6 x 4 kVA)
Type rating	4 kVA	24 kVA
	2.8 kW	16.8 kW
	n+x technology	
UPS Input		
Nominal connection voltage (automatic detection)	230 Vac (1/N/PE~) or 400/230 Vac (3/N/PE~)	
Voltage range without battery operation	160–300 Vac (1 ph~) or 277–520 Vac (3 ph~)	
Frequency	50 Hz/60 Hz ± 4 Hz	
Current consumption (max.)	22 A (1 ph~) or/7.3 A (3 ph~)	132 A (1 ph~) or/44 A (3 ph~)
Mains current (system disturbance factor)	λ ≥ 0.98	
UPS Output		
Rated output voltage	220 Vac/230 Vac/240 Vac ± 2 % (adjustable)	
Frequency in battery operation	50 Hz/60 Hz ± 0.2 Hz	
Nominal output current	17.4 A	104.4 A
Changeover time in the event of a mains failure	0 ms (without interruption)	
Voltage curve	sinusoidal THD < 3 %	
Overload capacity (online mode)	125 % for 30 s/130 % for 2 s	
	then switchover to integrated bypass 0 ms (without interruption)	
Crest factor	3	
BATTERY		
Nominal DC voltage (intermediate circuit)	120 Vdc	
Charging characteristics (default)	CVCC curve (trickle charge voltage 137 Vdc/charging current max. 3.5 Adc/module)	
Autonomy time	freely selectable and expandable with external battery modules	
	(standard available modules with 28, 42 or 65 Ah)	
	Service life: 10–12 years according to EUROBAT	
Exhaustive discharge protection/protection against excess load	yes	
COMMUNICATION		
Interfaces (dual-monitoring)	RS232/RS485 (with status messages and measured values),	
	Expansion slot (for potential-free contacts, USB, SNMP)	
Shutdown software (on CD)	5 network licences included in delivery, for all major operating systems	
	(e. g. Windows, Linux, Mac, Unix, FreeBSD, Novell, Sun etc.)	
Alarms (acoustic/optical)	graphic LCD display with digital indication of the input and	
	output parameters (voltage, frequency, power, etc.),	
	Battery parameters including detailed fault diagnosis	
	via password-protected level, additional LED display for	
	status messages/central fault indication	
GENERAL DATA		
Efficiency AC-AC (at full load)	> 89 %	> 88 %
Inherent noise (1m distance)	< 55 dB (A)	< 62 dB (A)
Operating temperature range	0°-40°C	
EMC Conformity	EN 50091-2, EN 61000-3-2, EN 61000-3-3	
EMC emitted interference	EN 61000-6-3 Class A	
Humidity	20 %–90 %	
Installation height	up to 1500 m at nominal output	
Housing colour	Blackline	
Dimensions of UPS approx. W x H x D (mm)	442 x 965 x 700 (chassis)/module each: 405 x 87 x 530	
Dimensions of battery cubicle approx. W x H x D (mm)	442 x 965 x 700	
Weight of UPS	75 kg (chassis) + 15 kg per module	
Weight of battery cubicle approx.	MBP 28: 160 kg, MBP 42: 200 kg, MBP 56: 255 kg, MBP 65: 270 kg,	
	MBP 84: 335 kg	
Scope of delivery	Parallel operation cable, communication cable,	
	management software "CompuWatch" (CD), operating instructions	
Conformity	CE	

Ease of use

Software & Hardware Options.

"CompuWatch" – the shutdown and UPS management software

... for automation in data processing.

Special features:

- Software in client/server technology
- Integration as a background process or as a service in operating systems
- Supports the RS232, USB and network interface in UPS devices
- User-friendly, easy to install and configure the software
- Supports Multi-ServerShutdown in homogenous and heterogeneous networks
- System activities can be programmed via a scheduler
- Password-protected control functions for the UPS/system
- User-friendly graphical frontend for monitoring UPS devices locally and remotely via the network
- Selectable bar graphs for measured values
- Automatic shutdown of operating systems
- Support of the Wake-up-on-LAN function for sequential reboot
- Customizable batch files and scripts for the shutdown procedure
- Alerting of events via network messages, e-mails, Short Message Services (SMS)
- Freely configurable event manager
- Storage of all UPS and IT events, logged by date and time
- Support for numerous operating systems on various processors:
  - MS Windows
  - Novell Netware
  - Linux
  - VM ware
  - MAC OS
  - IBM AIX
  - SUN Solaris
  - DEC VMS
  - IBM OS400
  - and many other Unix derivatives (further information can be found at www.aegpartnernet.com)

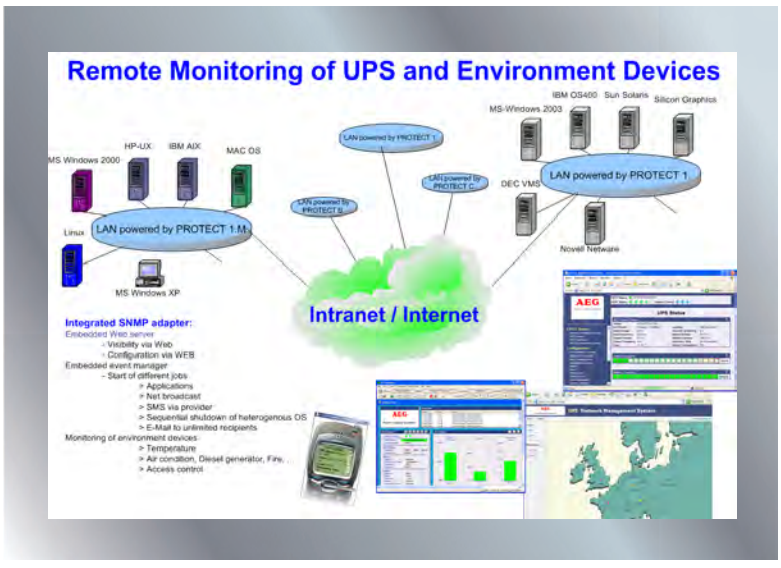
Network management software for UPS devices

... a solution for intelligent network management.

Special features:

- Web-based remote monitoring of power supply systems in the network
- Simple operation of a complex power supply management system
- Alerting of events via network messages, e-mails, Short Message Services (SMS)
- Storage of all events in a logbook
- Graphics for statistical analysis
- Customized presentations with background graphics are possible

A free basic version of the software is available for up to nine UPS devices on the "CompuWatch" CD-ROM.



Manual bypass

The external, manually operated bypass units are used for disconnecting the UPS, forexample, for maintenance purposes, whilst the connected loads continue to be supplied without interruption. An additional switch setting permits UPS test operation in addition to pure bypass operation.

MBS 2000/MBS 3000 for the
Protect B., C. /C.R up to 3000 VA series

MBS 6000 for Protect C. 6000R

MBS 24000 for the Protect C./1./1.M series

Relay card

The relay card for the UPS series with an available slot is used for signaling via potential-free contacts; these signals include mains failure, bypass operation and collective fault signals.

When used in conjunction with the Protect C. /1. /1.M series the card also provides connection to the AS/400 machine.

SNMP (PRO) adapter

The SNMP (PRO) adapter allows UPS devices to be monitored via the web.

If necessary, all relevant servers in the network can be shut down in a cascade sequence. The servers can also be restarted using Wake-up-on-LAN. As a result, an automatic shutdown and system reboot is possible.

As well as these special features of the adapter, it goes without saying that the UPS can be monitored via the integrated SNMP agents from network management software, such as HP-OpenView, SunNetManager or another NMS. The PRO version of the SNMP adapter also allows the integration of access control for the room, the air-conditioning system and a smoke or fire detector. In addition to this feature temperature and humidity can be measured by a special Environment Manager and processed by the SNMP PRO adapter.

Load switch

This compact module, as an addition to the SNMP PRO adapter, enables intelligent load management for UPS devices via the UPS monitor, the web browser or network management software.

PDB box (parallel board, distribution, bypass)

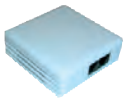
The compact parallel board makes it possible to connect up to 3 UPS devices to raise availability levels (active redundancy) and to increase UPS output. An integrated infeed and outfeed panel offers unlimited expansion potential without requiring the modification of the existing LVMD. An integrated manual bypass unit is also provided for maintenance purposes.

The parallel board is available for the following product types:

- Protect C. 6000, Protect C. 10000
- Protect 1. 100, Protect 1. 150
- Protect 1. 200

Remote signal indicator

The remote signal indicator is used to remotely display the operating status of the UPS in real time. An additional bar graph provides information about current UPS capacity utilisation or the remaining capacity in emergency power mode. A deactivatable audible alarm complements the visual display and a remote disabling contact enables emergency shutdown if required. The system can be installed at a distance of up to 500m. The remote panel transfers data and is supplied with power via a conventional patch cable. This is available for units in the following series: Protect C. (Tower 6/10 kVA), Protect 1. or Protect 1.M



Temperature sensor

The digital temperature sensor is connected directly to the SNMP PRO adapter.
The sensor is predominantly used in server cubicles or for room monitoring.
The installation and configuration is user-friendly.

This is a small selection of the available accessories. More information can be obtained at **www.aegpartnernet.com**

Service: Your Power Partner for Services.

"Only a professionally managed and maintained UPS can provide maximum availability and effective cost control."

Our high standards and decades of experience mean we are also able to offer services which are cost-effective, efficient and quick.

For the first 24 months after the initial purchase we provide a comprehensive advanced replacement service for the device and battery from the compact UPS series. Additional service packages, which address all of the user's needs, are available when purchasing the UPS device. These packages ensure optimal cost control over a period of up to 60 months.

The following service packages are available:

Pro-Care Guarantee

Warranty extension
to 36 months from the date of sale. This can be optionally arranged when purchasing the system. Available for all compact UPS systems. Advanced replacement of the UPS within the warranty period.

Pro-Care Guarantee PLUS*

Warranty extension to 60 months from the date of sale. This can be optionally arranged when purchasing the system. Available for the following series: Protect C., Protect 1. and Protect 1.M; advanced replacement of the UPS within the warranty period.

Repairs and individual service measures available on request!

Pro-Care Comfort

For Protect C. to 3 kVA: Full factory maintenance of your system with a VDE safety check. Loan of a UPS unit during the maintenance period.

For Protect C. 6 & 10 kVA, Protect 1. and Protect 1.M: On-site maintenance of your system with function test and battery check.
Available as a service package at any time.

*** Up to 5 year warranty**

IT

- IBM
- Motorola
- Sun Microsystems
- Unidata

Telecommunications

- British Telecommunications
- Deutsche Telekom
- E-Plus
- DORNIER SATELLITs
- Vodafone
- Arcor
- KPN Telecom
- Post Luxemburg
- Telephone Organisation of Singapure
- Telecon Italy (WIND)

Internet

- Accenture New Office
- Alcatel Cable
- ARGE Network
- AT&T UK
- Cable & Wireless
- Carrier
- City reach
- COLT Telecommunications
- DETE Immobilien
- Dutchtone
- Easynet UK
- Etesca, Cuba
- EX-CELL-O
- Exchange Quays UK
- Global Crossing
- Hutchinson
- LambdaNet
- Level 3 Communications
- Marconi Communications
- MCI Worldcom
- Motorola
- Nortel Networks
- Orange UK Completel
- O_2
- PsiNet
- Quest
- Redbus Interhouse
- Telecity
- Teleglobe
- Telectron
- Telestet
- VIAG Intercom
- Vodafone
- Worldcom
- Versatel
- World Online
- 360 Networks

Oil and gas industry

- ABB-Lumus
- Bayer AG
- British Gas
- Norsk Hydro
- Shell NL + UK
- Wacker Chemie AG

Power stations

- KKW Oskarshamn
- KW Neu Isenburg
- WINGAS

Transport and traffic

- Airport Budapest
- Airport WARSCHAU
- BMW London
- BMW R&D Center München
- Volkswagen (VW)
- Polizei Hamburg
- DORNIER GMBH
- Deutsche Flugsicherung
- Dynamic Stock
- Finance Ministry of Hungary
- Stadt Hannover
- Studio HH
- Toyota

Industry – general

- Artronic Ltd.
- Hydro Agri
- Krauss Maffei
- MAN Turbomaschinen AG
- NG Bailey
- Marks & Spencer
- Procter & Gamble
- Tecstiplik

Banks and insurance companies

- Alliance & Leicester
- Bank Austria
- Bank für Gemeinwirtschaft
- National Bank Hungary
- Commerzbank
- Exchange House
- Giro Bank
- Exchange Quays
- Lloyds TSB Bank
- Schmidt Bank
- Schröder Bank
- Yapi Kredi Bank

Protect 3.

Areas of application:

Host computers, file servers, workstations and computer centres as well as their integration in complex networks in industrial companies.

Brief description:

Ready-to-connect UPS systems in genuine online technology (double conversion).

Market leading technological product with maximum availability levels thanks to internal redundancy and redundant parallel operation with up to 8 devices. Robust due to its overload capacity and short circuit protection.

The level of immunity against electrosmog provided by the Protect 3. series, for example, is 2-3x higher than the UPS standard prescribes.

Power spectrum:

Protect 3.31 10 kVA – 60 kVA
Protect 3.33 10 kVA – 120 kVA

Special features:

- Lower operating costs
- Very good dynamic properties
- Separate microprocessors for rectifiers, invertersand SBS
- Intelligent battery charging management
- VT100 emulation for IBM RZ technology
- Ergonomic graphic display for easy operation (plain text display in 17 languages)

Protect 3.M

Areas of application:

Computer centres, telecommunications, Internet nodes, banks and insurance companies, building control systems, process control systems.

Brief description:

The use of VFI (continuous conversion) technology by the Protect 3.M unit reliably protects your systems against all power supply problems, such as current failure, power surges, voltage drops, etc. Thanks to its modular design it is possible to adapt the system to your changing requirements at any time. The compact modular construction of the Protect 3.M unit allows flexible expansion of the UPS power rating to 120 kVA with 15 kVA automatic contacting hot-swap modules.

Power spectrum:

Protect 3.M 15 kVA - 120 kVA

Special features:

- High safety reserves as a result of n+x technology
- Integrated electronic bypass
- Use of manufacturer-independent standard batteries
- Modules easily exchanged due to hot-swappable technology
- High availability (MTBF)

Power (kVA)	10-120 kVA	15-120 kVA
Technology according to IEC 62040-3	VFI (double conversion)	VFI (double conversion)
Input/output	3 ph~/1 ph~ or 3 ph~/3 ph~	3 ph~/3 ph~
Parallel Operation	yes	yes (internal)
Autonomy time at full load (min.)	5-xxx (external)	5-xxx (external)

Protect 4.

Areas of application:

Building control systems, computer centres, telecommunications, Internet modes, banks and insurance companies, equipment and systems for air traffic control. Suitable for all critical applications in this spectrum.

Brief description:

This is the first time up to 1000 kVA has been available in a compact, ready-to-connect device with online technology. Maximum availability due to internal redundancy and redundant parallel operation with up to 8 devices (8 MVA!). The system is controlled by 3 microprocessors - which means superior 100% digital UPS technology!

Power spectrum:

Protect 4.33 160 kVA – 1000 kVA

Special features:

- Expansion up to 8 MVA is possible (redundant parallel operation)
- Up to 94% efficiency (including part-load operation)
- 12 pulse rectifier with sinusoidal mains current consumption
- Control via 3 microprocessors
- Intelligent battery charging management
- Multilingual user interface in 16 languages

Protect 5.

Areas of application:

Process control technology in power plants, life support equipment in hospitals, industrial facilities, transformer stations, control and supervision equipment in chemical and petrochemical industries, process computers, etc.

Brief description:

Robust and safe! The Protect 5. series guarantees a stable power supply for all connected loads through exeptional online technology. The short duration overload protection lies at 500%. Facilities and processes are protected absolutely through reliable designs and stable operation in the case of high short circuit currents and a high crest factor.

Power spectrum:

Protect 5.31 10 kVA – 120 kVA
Protect 5.33 25 kVA - 120 kVA

Special features:

- Potential free 220 V battery voltage for connection to an existing DC source
- Isolation transformer in the rectifier and inverter
- Designed for operation in extremely critical areas, including life support facilities
- Extreme flexible in regards to mechanical and electrical requirements

160-1000 kVA	160-1000 kVA
VFI (double conversion)	VFI (double conversion)
3 ph~/3 ph~	3 ph~/3 ph~
yes	yes
5-xxx (external)	5-xxx (external)

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www.aegpartnernet.com

Dealer stamp

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